



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/509,232	11/06/2000	Wolfgang Buerger	GT/83	9676

7590 10/09/2008
Allan M Wheatcraft
W L Gore & Associates Inc
551 Paper Mill Road
PO Box 9206
Newark, DE 19714-9206

EXAMINER

LEWIS, BEN

ART UNIT	PAPER NUMBER
----------	--------------

1795

MAIL DATE	DELIVERY MODE
-----------	---------------

10/09/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/509,232	Applicant(s) BUERGER ET AL.	
	Examiner Ben Lewis	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 31 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 31 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

Detailed Action

1. The Applicant's amendment filed on August 7th, 2008 was received. Claim 1 was amended. Claims 1-30 and 32-34 were cancelled.
2. The text of those sections of Title 35, U.S.C. code not included in this action can be found in the prior Office Action (issued on April 7th, 2008).

Claim Rejections - 35 USC § 103

3. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. (EP 0 718903) in view of Branca et al. (U.S. Patent No. 5,814,405).

With respect to claim 31, Kato et al teaches an electrochemical energy storage device comprising at least two electrodes, an electrolyte, and a porous carrier material (expanded PTFE) for the electrolyte having an inner pore structure in which a perfluorinated surface-active substance is present disposed between the electrodes. (Col. 1, lines 3-5; Col 3, lines 11-25, 35-38; Col. 4, lines 33-47; Col 6, lines 36-47 [note ion exchange/electrolyte resin is the perfluorocarbon-based ion exchange resin filled in pores]). However, Kato fails to disclose a carrier material inner pore structure consisting essentially of a series of highly elongated nodes with an aspect ratio of 25:1 or greater that are generally aligned in parallel that are interconnected by fibrils. Branca

Art Unit: 1795

teaches an expanded PTFE (ePTFE) useful in electronic products and as support layers in composite constructions that is much less sensitive to changes in temperature and more uniform than prior art ePTFE. This ePTFE has an internal microstructure consisting essentially of a series of nodes interconnected by fibrils, said nodes generally aligned in parallel, being highly elongated and having an aspect ratio of 25:1 or greater.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the ePTFE as taught by Branca et al. as the carrier material in the electrochemical storage device as taught by Kato et al. because it has a uniform microstructure, is useful in electronic products, and is less sensitive to changes in temperature that may occur in an electrochemical energy storage device.

With regard to a second perfluorinated surface-active substance different from said first electrolyte being present, Branca et al. teach that in another embodiment, one paste extruded tape or membrane can be layered, with another paste extruded tape or membrane to produce an asymmetric composite form of the invention in which the node-fibril microstructure is different on one side as opposed to the other. Lamination is achieved by preparing an extrudate of each membrane and rolling down as described further above; and then combining the two membranes into layers, followed by calendering, drying, and the stretching, sintering, and stretching again, all as described further above (Col 3 lines 60-67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the composite structure as taught by Branca et al. as the carrier material in the electrochemical storage device as taught by Kato et

Art Unit: 1795

al. because Branca et al. teach that the resulting ePTFE articles are extremely uniform and possess a unique microstructure characterized as having highly elongated nodes interconnected by fibrils. The resulting articles also have a unique set of physical properties including high strength and low resistance to fluid flow (Col 4 lines 3-13).

Examiner notes that lamination is a coating operation and in the case of the prior art, the lamination of a second carrier layer of ePTFE material as taught by Branca et al. reads on applicants limitation of "wherein said surfaces are coated at least partly with a layer of a second perfluorinated surface-active substance different from said first electrolyte." Examiner also notes that since the other embodiment of Branca et al. is a composite structure which includes a second perfluorinated substance composite and the composite structure includes the node-fibril microstructure which are contained in the inner pores of Branca et al. then the inner pore surfaces of Branca et al. are at least partly coated with the second perfluorinated material of Branca et al.

Double Patenting

4. Claim 31 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 15 of U.S. Patent No. 6,613,203 B1. Although the conflicting claims are not identical, they are not patentably distinct from each other because both instant claim 31 and conflicting claim 15 patent essentially

Art Unit: 1795

describe a membrane electrode assembly formed of expanded polytetrafluoroethylene (ePTFE) with a structure including nodes aligned in parallel and interconnected with fibrils, such that the nodes have an aspect ratio of 25:1 or greater. In both the prior art and the instant invention, the nodes are filled with a material permeable to ions.

Although the patent claim 15 and instant claim 31 do not use identical language, one of ordinary skill in the art would understand that: "expanded PTFE" recited in the .203 patent is the "carrier material for the electrolyte" recited in instant claim 31, and "electrolytes" and "perfluorinated surface active substances" recited in instant claim 31 encompass the "ion exchange material" required by claim 1 of the .203 patent, which could function as the electrolyte. Additionally, the perfluorinated surface-active agent of the instant invention is capable of ion exchange and can function as an electrolyte.

Response to Arguments

5. Applicant's arguments filed on August 7th, 2008 have been fully considered but they are not persuasive.

Applicant's principal arguments are

(a) Applicants have amended claim 31 to define that the inner pore structure defines pores with inner surfaces, wherein said inner surfaces are coated at least partly with a layer of a second perfluorinated surface-active substance different from said first

Art Unit: 1795

electrolyte, which is then contained in the pores with the coated inner surfaces.

Applicants contend that this amendment clarifies that it is the inner surface of the pores that is coated with the second electrolyte. This clearly distinguishes the cited art wherein two separate composite structures each containing a single electrolyte are laminated together. Addressing the Examiner's statement that "lamination is a coating operation and in the case of the prior art, the lamination of a second carrier layer of ePTFE material as taught by Branca et al. reads on applicants limitation of 'wherein said surfaces are coated at least partly with a layer of a second perfluorinated surface-active substance different from said first electrolyte,'" (Office Action at page 4), Applicants contend that such lamination would not in fact coat the inner surfaces of the pores as now specified in claim 31.

By contrast, both of the cited references disclose only the impregnation of the pores of the carrier material with a single substance. There is no teaching or suggestion in either reference of first coating the surfaces of the pores, and then impregnating a second, different substance into the pores.

Lamination of multiple carrier layers, each impregnated only with a single substance, is not analogous (and certainly not anticipatory or obviating) to the claimed invention of a single carrier material having pores with its surfaces coated by one material and also containing a second, different material. Simply laminating two carrier materials, each with a single substance contained within its pores, only means that you

Art Unit: 1795

have multiple layers of singly impregnated carrier materials. Even if the substance is impregnated within each carrier layer is different, it still does not teach or suggest the claimed invention wherein the first material is coated on the surfaces of the pores and the second material is contained within those same coated pores.

In response to Applicant's arguments, please consider the following comments.

(a) With respect to the coating of the inner surface of the pores, Branca et al. teach that in another embodiment, one paste extruded tape or membrane can be layered, with another paste extruded tape or membrane to produce an asymmetric composite form of the invention in which the node-fibril microstructure is different on one side as opposed to the other. Lamination is achieved by preparing an extrudate of each membrane and rolling down as described further above; and then combining the two membranes into layers, followed by calendering, drying, and the stretching, sintering, and stretching again, all as described further above (Col 3 lines 60-67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the composite structure as taught by Branca et al. as the carrier material in the electrochemical storage device as taught by Kato et al. because Branca et al. teach that the resulting ePTFE articles are extremely uniform and possess a unique microstructure characterized as having highly elongated nodes

Art Unit: 1795

interconnected by fibrils. The resulting articles also have a unique set of physical properties including high strength and low resistance to fluid flow (Col 4 lines 3-13).

Examiner notes that lamination is a coating operation and in the case of the prior art, the lamination of a second carrier layer of ePTFE material as taught by Branca et al. reads on applicants limitation of "wherein said surfaces are coated at least partly with a layer of a second perfluorinated surface-active substance different from said first electrolyte." Examiner also notes that since the other embodiment of Branca et al. is a composite structure which includes a second perfluorinated substance composite and the composite structure includes the node-fibril microstructure which are contained in the inner pores of Branca et al. then the inner pore surfaces of Branca et al. are at least partly coated with the second perfluorinated material of Branca et al.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

Art Unit: 1795

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ben Lewis whose telephone number is 571-272-6481. The examiner can normally be reached on 8:30am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 09/509,232

Page 10

Art Unit: 1795

/Ben Lewis/

Examiner, Art Unit 1795

/PATRICK RYAN/

Supervisory Patent Examiner, Art Unit 1795